

California Academy of Sciences' Member Newsletter

Academy

Dec. 2004 & Jan. 2005

New Army Ants Arrive

After an eventful trip, Academy scientists return from Costa Rica with 800,000 new ants.

Things are supposed to be easier the second time around, but Academy scientists had no shortage of challenges on their recent mission to collect new Army ants for the *ANTS* exhibit. Entomologist Brian Fisher, Ph.D., and biologist Jim Evans traveled to Costa Rica at the end of October to procure new Army ants after the original colony lost a battle with a group of uninvited dermestid beetles. Although Army ants are ferocious predators that can bring down animals many times their size, the beetle larvae were protected by long, toxic hairs, and over the course of a few weeks, the beetles wiped out the ants. This surprising event served as a reminder that scientists currently know very little about Army ants, since captivity studies were not possible before *ANTS* opened. In order to ensure that Academy scientists and their colleagues could continue their research, the Academy organized an expedition to Costa Rica to collect more Army ants.

Upon arriving at the La Selva biological station in northern Costa Rica, which covers nearly 4,000 acres of rainforest habitat, the team members began to comb through miles of dense vegetation, eyes peeled for a suitable colony of Army ants.



The team used an eighteen-gallon Shop-Vac to vacuum up the ants.

Within two days, they had located six colonies, but none was easily accessible. One was located deep in an armadillo hole, another was 200 feet above ground in a tree, and a third was enmeshed in an impenetrable mass of roots. The team decided to monitor the colonies overnight in the hopes that at least one would move into a more convenient location by the next morning.

Fortunately, two colonies cooperated, and the next day, Brian and Jim vacuumed each colony into a separate container, securing about 800,000 ants. One of these colonies was located at about head-height inside a mass of air roots. "As we hacked away roots to access the ants," said Fisher, "it just started raining ants."

That was the easy part of the collection process. The hard part began when the team's flight to San Francisco was cancelled due to weather problems. Since the next flight to San Francisco did not leave for three days, by which time the ants would have been dead, the team boarded a plane to Los Angeles. Unfortunately, the Academy's collecting permit only allowed the ants to arrive in San Francisco. After much negotiation, the Department of Homeland Security allowed the ants to bypass a week-long quarantine process and board a flight to San Francisco on one condition – the State Agricultural Inspector who was supposed to meet the original flight in San Francisco had to fly to Los Angeles to personally inspect the Academy's cargo. Inspector Robert Dowell saved the day by boarding the next flight to Los Angeles and allowing the Army ants to complete their long journey to San Francisco.

Two new colonies of Army ants arrived safely at the Academy on Thursday, October 28, much to the delight of the school groups that were visiting that day. Brian and Jim opened their precious cargo while a chorus of kids chanted "Release the ants!" and scrambled to get the best view of the new arrivals. The ants are healthy and responding well to the new concrete floor in the arena, which allows them to maneuver more easily. They will be on display through April 2005 – visit them often before they leave!



Brian and Jim released one colony into each side of the arena.

A Powerful Poison

Academy scientist Jack Dumbacher, Ph.D. recently solved an intoxicating question: where do toxic birds and poison-dart frogs acquire their potent poisons?

In the mid-1960s, scientists identified a potent neurotoxin in the skin of a Colombian poison-dart frog. This toxin, called a batrachotoxin, was so powerful that Native Americans used it to coat the tips of their blow darts. Since the initial discovery, researchers have identified several species of frogs in the genus *Phylllobates* that contain batrachotoxins, but no one has been able to determine where the poison comes from. Poison-dart frogs that are raised in captivity do not contain detectable amounts of batrachotoxins, so scientists have assumed that they acquire their toxins from a dietary source in Colombia. However, restrictions on field work in Colombia have prevented scientists from tracking down the batrachotoxin source. The search seemed to have reached a dead end until Jack Dumbacher, Ph.D., Assistant Curator and Chair of the Ornithology and Mammalogy Department at the Academy, discovered batrachotoxins in another animal – a poisonous songbird from New Guinea.

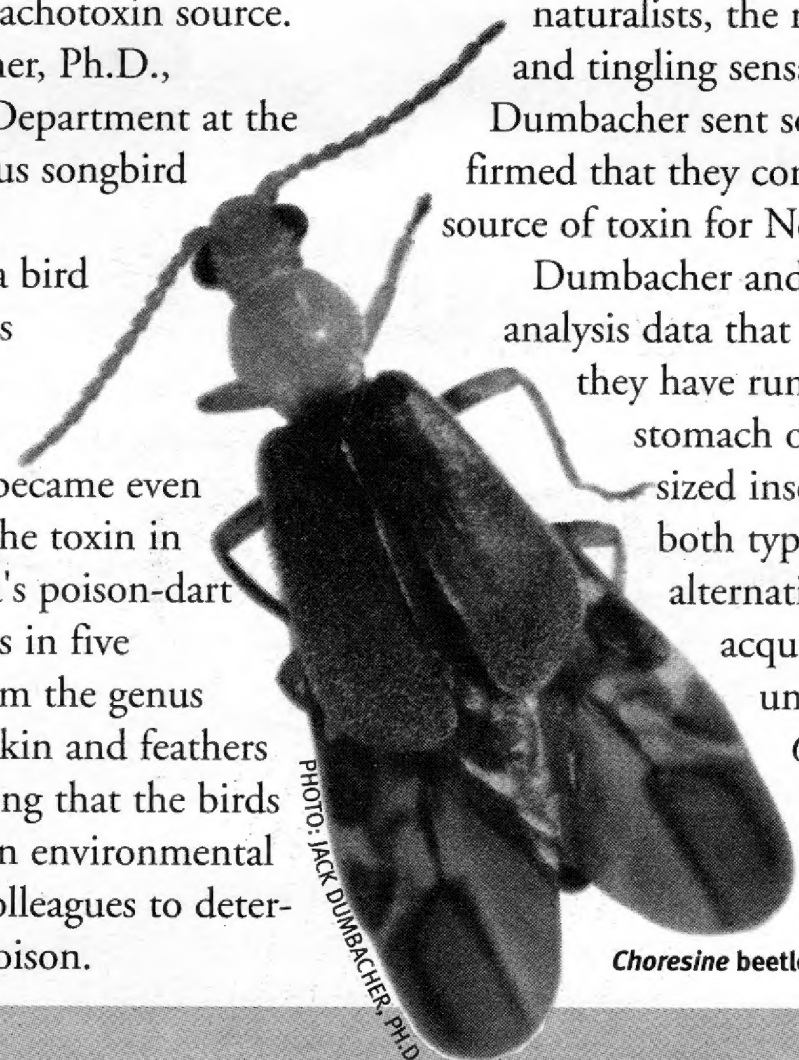
In 1992, after hearing from local people in New Guinea about a bird called a Pitohui that caused burning or numbing sensations if it was eaten, Dumbacher tested the skin and feathers of the species and detected the presence of neurotoxins. This finding presented the first known example of chemical defense among birds. The results became even more intriguing when Dumbacher and his colleagues learned that the toxin in question had only been found in nature once before – in Colombia's poison-dart frogs. Over the next several years, Dumbacher found batrachotoxins in five species of birds from the genus *Pitohui*, as well as in one species from the genus *Ifrita*. His data showed that the concentration of toxins in a bird's skin and feathers varied not only by species, but also by geographic location, suggesting that the birds – like the poison-dart frogs – were acquiring batrachotoxins from an environmental source. Since then, Dumbacher has been working with a team of colleagues to determine which plant or insect may be responsible for producing the poison.

Their mission has been mammoth by any measure – New Guinea is home to over 700,000 known species of insects and about 15,000 plant species. Dumbacher attempted to probe the most promising suspects first by conducting stomach analyses on poisonous *Pitohuis* and *Ifrita* birds and then testing any identified species for toxins. He also talked to local villagers and asked them to point out any plants or insects they knew to cause burning or numbing sensations. He found the proverbial needle in the haystack when villagers from Herowana pointed out a beetle from the genus *Choresine* that they called a nanisani. According to these local

naturalists, the name "nanisani" refers specifically to the unusual numbing and tingling sensations that are caused by contact with one of these beetles.

Dumbacher sent some of these beetles out for analysis, and test results confirmed that they contained batrachotoxins, making them a possible direct source of toxin for New Guinea's poisonous birds.

Dumbacher and his colleagues have yet to collect extensive stomach analysis data that would directly link the beetles to the birds, but in the tests they have run so far, they have already found a *Choresine* beetle in the stomach of a *Pitohui*. They have also found a number of *Choresine*-sized insects in both *Pitohui* and *Ifrita* specimens, suggesting that both types of birds likely acquire their poison from the beetles. The alternative hypothesis that both the birds and the beetles are acquiring their poison from a third source, such as a plant, is unlikely, since the *Ifrita* seems to be exclusively insectivorous. *Choresine* beetles have relatives that live in the rain forests of Colombia. These beetles are a likely source of the batrachotoxins found in Colombia's poison-dart frogs.



Choresine beetle

IMPORTANT NEWSLETTER CHANGE

The Academy is in the process of transitioning to a quarterly newsletter schedule, so a Members' Newsletter will not be sent out for the month of February. Please check the Web site at www.calacademy.org for information about February programs, classes, and lectures at the Academy. The next newsletter, the Spring 2005 issue, will cover March, April and May programs.

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MESSAGE TO MEMBERS

Science in Action

The Academy at 875 Howard Street is a "learning laboratory" where experimentation and prototyping are occurring everyday. As a scientific institution, the Academy is committed to the experimental process and there is no greater example of this approach than the *ANTS: Hidden Worlds Revealed* exhibit.

These amazing insects have never before been displayed in an exhibit of this scale, and this is the first opportunity many scientists have had to analyze them in such a long-term captivity study. Academy entomologists and their colleagues from

Florida to Germany have taken advantage of this opportunity to study a range of Army ant behaviors and characteristics, including reproductive cycles, genetic trends, and dietary patterns. Their findings will be published in two manuscripts later this year.

You may have seen or heard that the initial Army ants that populated the exhibit were attacked and decimated by a colony of dermestid beetles (*Dermestes ater*). I'm happy to report that Brian Fisher, Ph.D. recently collected two new colonies of Army ants from Costa Rica so that this ground-breaking experiment can continue. Most importantly, we are applying the knowledge we gained from the initial ant colonies to help ensure our most recent residents flourish in their new environment.

In the cover story of this issue, you can read about Brian's arduous journey to bring some 800,000 Army ants back to San Francisco, including run-ins with the Department of Homeland Security and the State Agricultural Inspector along the way. Another interesting article details the recent discovery of batrachotoxins in a poisonous songbird of New Guinea by Academy scientist Jack Dumbacher, Ph.D., a discovery that is leading Dumbacher and his colleagues toward some very interesting results.

The arrival of the Army ants from Costa Rica and the work of Dumbacher's in New Guinea are just two examples of the research and testing that occurs everyday at the Academy. I hope you and your family will come visit often and see true science in action at the Academy!

— Patrick Kociolek, Ph.D.
Executive Director

Conversations at the Herbst Theatre 2005

Presented by City Arts & Lectures, Inc.
All Programs at Herbst Theatre, 8 pm

January 24
Monday

Craig Venter, Ph.D.

J. Craig Venter Science Foundation, Founder of Celera Genomics
Former President, Center for the Advancement of Genomics
In conversation with Roy Eisenhardt

January 26
Wednesday

Jared Diamond, Ph.D.

Ecologist and evolutionary biologist
Collapse; Guns, Germs, and Steel
In conversation with Nina Jablonski, Ph.D.

February 8
Tuesday

The Annual Claire Matzger Lilienthal Distinguished Lecturer
Lester Brown

Founder, Earth Policy Institute & Worldwatch Institute
Plan B: Rescuing a Planet Under Stress and a Civilization in Trouble; Eco-Economy; State of the World
In conversation with Paul Hawken

February 16
Wednesday

Wendell Berry

Author and farmer; *Hannah Coulter; Citizenship Papers*
In conversation with Jack Shoemaker

April 27
Wednesday

David Suzuki, Ph.D.

Environmentalism, science broadcaster (BBC)
Chair of David Suzuki Foundation
The Sacred Balance; The Nature of Things; A Planet For the Taking
In conversation with Jerry Kay

May 25
Wednesday

Kenn Kaufman

Author and artist; *Kaufman Focus Guides; Lives of North American Birds; The Kingbird Highway*
In conversation with Jack Dumbacher, Ph.D.

October 10
Monday

Andy Goldsworthy

Environmental sculptor

Lecture: \$16.50 members, \$18.50 non-members
Series: \$108 members, \$115 non-members

This series is made possible, in part, by a grant from the Richard and Rhoda Goldman Fund.

To order tickets, please call City Box Office
at (415) 392-4400 or visit cityboxoffice.com.

California Academy of Sciences **does not** process ticket orders for these lectures.

Adult and Family Courses

Wild Mushrooms of the Bay Area Seminar and Field Trip with Debbie Viess

Fall rains produce a bounty of Bay Area mushrooms, and December is the best time to find them. Discover a fungal wonderland in the wilds of San Mateo County's Memorial Park. This is the perfect place to learn about wild mushrooms, given the park's diversity of habitats (from oak woodland to conifer forest), easy hiking, and very little poison oak. Learn about the natural history of mushrooms and how to identify and appreciate the many edible, poisonous, and ornamental species that occur in the area. Suitable for adults and teens ages fifteen and up.

Seminar: Thursday, December 9, 7:30–9 pm
Field Trip: Sunday, December 12, 10 am–1 pm
Memorial Park, Loma Mar - field trip only.
\$35 members, \$45 non-members

Winter Birds of Bodega Bay Field Trip with David Wimpfheimer

One of California's best birding areas, Bodega Bay is a critical feeding area for thousands of ducks, grebes, loons, pelicans, herons, and other waterbirds. The tidal flats, rocky shores, and beaches provide diverse habitats for a huge number of godwits, dunlin, and other sandpipers, while many raptors such as peregrine falcons and northern harriers take advantage of this rich fare. Explore back roads for additional raptors, bluebirds, and other landbirds. This is a magical area in the bright sunshine of a winter day or even under gray, misty skies. Suitable for adults ages eighteen and up.

Saturday, December 11, 9 am–3:30 pm
Doran Regional Park, Bodega Bay
\$30 members, \$40 non-members

Whales and Coastal Wildlife Cruise Field Trip with Ronn Patterson

Watch one of nature's most spectacular events – the annual migration of the California gray whale. January is the peak of the southward migration, and Point Reyes is one of the best places on the West Coast to catch the action. The voyage aboard the *Delphinus* begins with an informative trip across the bay and ends with a sunset cruise back to the Berkeley Marina. Along the way, be treated to the secluded coast of Marin with its great seascapes and seal, sea lion, and bird rookeries. Suitable for adults and teens ages fifteen and up.

Saturday, January 8, 7 am–5 pm
Berkeley Marina, Berkeley
\$75 members, \$85 non-members

Birding at Palo Alto Baylands and Mountain View Shoreline Field Trip with Dan Murphy

With levees and boardwalks, Palo Alto Baylands and Mountain View Shoreline are among the most accessible sites for birders on the bay. Eighty bird species, including ducks, shorebirds, waders, and raptors, winter in their freshwater marshes, extensive mudflats, and open grassy areas. Clapper and black rails are regularly seen at the baylands' extensive salt marsh. Suitable for adults and teens ages fifteen and up.

Saturday, January 15, 8 am–3 pm
Palo Alto Baylands, Palo Alto
\$30 members, \$40 non-members

Illustrating Reptiles and Amphibians Workshop with Carolynne Griffin

Chameleons, tortoises, and tropical frogs! Explore the diversity and beauty of reptiles and amphibians with the unique combination of colored pencils, pen and ink. Using the Academy's collections, supplemented by illustrations and photos, learn more about the animals' fundamental structural differences and similarities while developing illustration skills in color, texture, and pattern. Suitable for adult and teen students of all skill levels.

Two Saturdays: January 29 and February 5
9:30 am–2 pm both days; Academy Classroom
\$65 members, \$75 non-members
(art supplies are not included)

i Pre-registration is required. For more information, call (415) 321-8000, e-mail edregistrar@calacademy.org, or visit www.calacademy.org/education.

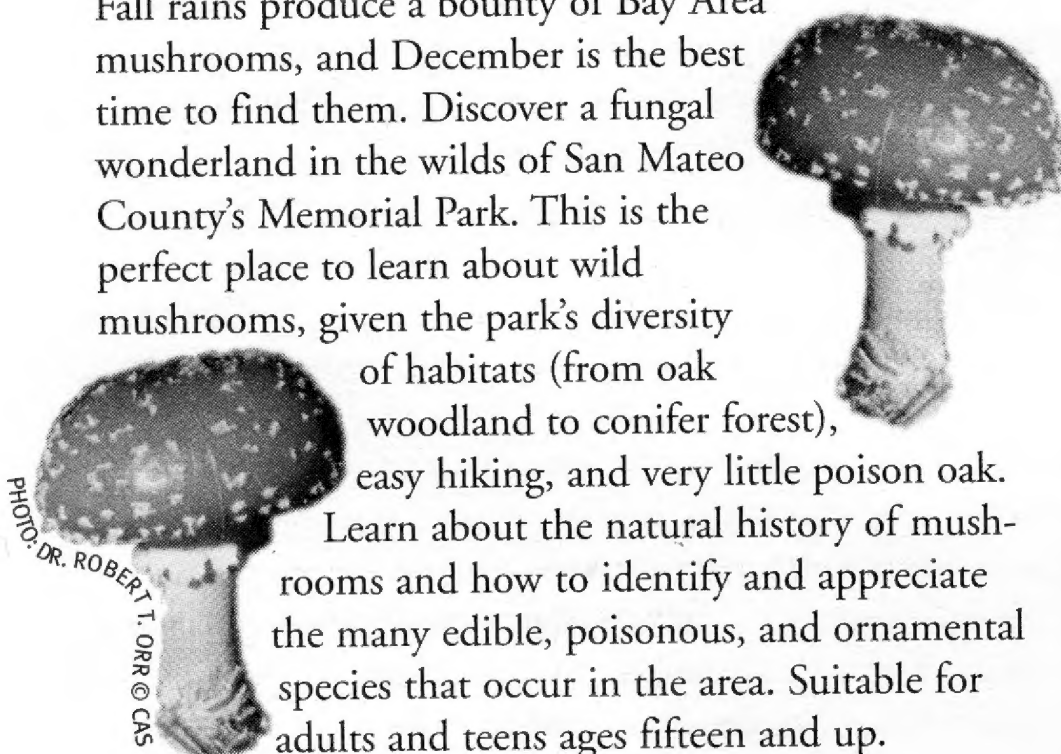


PHOTO: DR. ROBERT L. ORR © CAS

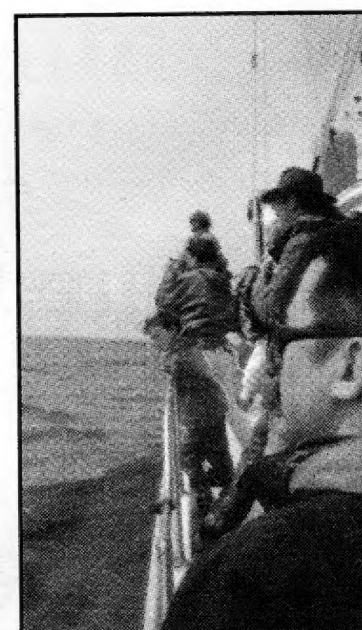


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LECTURES

Special Lecture at the Jewish Community Center of San Francisco

Boiling Point

The Debate on Global Warming Heats Up

Ross Gelbspan, a reporter and editor for thirty-one years at *The Philadelphia Bulletin*, *The Washington Post* and *The Boston Globe*, has spent the last decade sounding the alarm about the global climate crises. This year, with the publication of his second book on the topic (*The Heat is On* and *Boiling Point*), Gelbspan uses his investigative skills to discern fact from fiction and tells a compelling story about the urgency of climate change. In this lecture, he provides a brief treatment of the science and a look at some of the recent impacts of the increasingly unstable climate. He also highlights the political, economic, and equity dimensions of the climate issue, including its implications for security in a post 9-11 world.

Not content to merely report on the environmental

crisis, Gelbspan outlines a set of solution strategies designed to reduce global emissions by the seventy percent required to allow the climate to re-stabilize. His new book, *Boiling Point*, which received a strong favorable review written by Al Gore in the *Sunday New York Times Book Review*, will be available at the lecture. **A book signing will follow the lecture.**

Thursday, December 2, 8 pm
Jewish Community Center of San Francisco
3200 California Street at Presidio Avenue
\$6 members & students, \$8 non-members
To order tickets, call (415) 292-1233 or
e-mail arts@jccsf.org. Tickets also sold at the door,
if available.

Film Screening

Oil on Ice:

The Arctic National Wildlife Refuge in the Balance

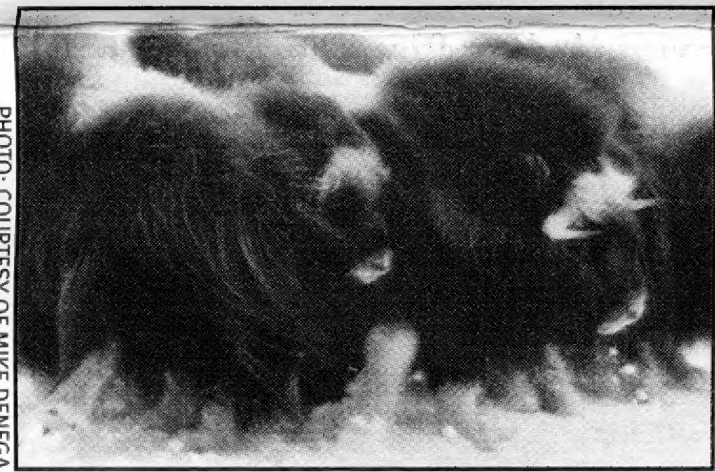
Co-sponsored by the Sierra Club

In March 2002, Senator Frank Murkowski (now governor of Alaska), held a blank white poster up in front of Congress as his rendition of what the Arctic National Wildlife Refuge looked like. By doing so, he hoped to encourage the federal government to open the protected area to oil drilling. "Don't be misinformed," he demanded. *Oil on Ice*, a one-hour documentary about the refuge and the controversy over drilling for oil there, unveils a very different picture than the lifeless wasteland portrayed by Murkowski. The film is a visually stunning journey through a pristine land that is teeming with wildlife, enriched by centuries of Native American culture, and at risk of being destroyed by the invasive trucks, bulldozers, and

places, is inextricably linked to decisions our nation makes about energy policy, transportation choices, and other seemingly unrelated matters, while the culture and livelihood of the native Gwich'in Indians and the survival of migratory wildlife are caught in the balance.

Join the Academy and the Sierra Club for a special viewing of this unique documentary. A short clip of the film was presented during Subhankar Banerjee's exhibit at the Academy in 2003. The film's director, Dale Djerassi, will host an audience question and answer period after the lecture.

Wednesday, December 8, 8 pm
Jewish Community Center of San Francisco
3200 California Street at Presidio Avenue
\$6 members & students, \$8 non-members
To order tickets, call (415) 292-1233 or
e-mail arts@jccsf.org. Tickets also sold at the door,
if available.



Muskoxen are well-adapted to the harsh winters in the Arctic.

pipelines of the oil industry. *Oil on Ice* shows how the fate of the refuge, one of America's last wild

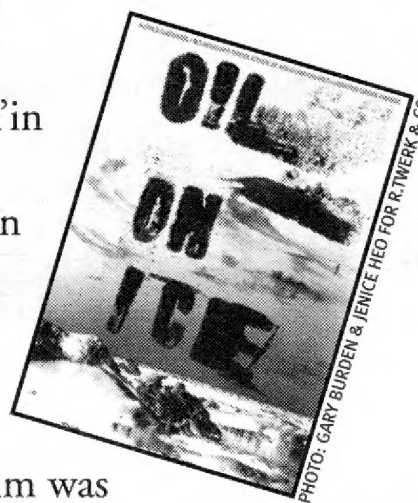


PHOTO: GARY BURDEN & JENNIFER RED FOR ATWERN & CO

i For information about all Academy lectures, call (415) 321-8000 or e-mail lectures@calacademy.org.

Morrison Planetarium's Benjamin Dean Lecture Series

The Chandra X-ray Observatory

Harvey Tananbaum, Ph.D.,
Director, Chandra X-ray Center,
Smithsonian Astrophysical Observatory

The Chandra X-ray Observatory has provided an unprecedented view of the Universe at X-ray wavelengths since its launch more than five years ago. Dr. Tananbaum will present a brief overview of how the X-ray telescope works and will summarize a few of the key features of the observatory. The focus of the talk will be on recent Chandra results, including spectacular images of diverse astrophysical systems such as supernova remnants and galaxy clusters. The talk will shed (X-ray) light on mysteries involving exploding stars, dark matter, dark energy, and black holes.

Monday, December 6, 7:30 pm

Exploding Stars, Blazing Galaxies, and Monstrous Black Holes: The Extreme Universe of Gamma-ray Astronomy

Lynn Cominsky, Ph.D.,
Sonoma State University

Gamma-rays are created by the most violent and energetic processes in nature, including flares from super-massive black holes at the centers of galaxies. Images and data from NASA's Compton Gamma-ray Observatory will demonstrate these exotic phenomena. New results from the Swift gamma-ray burst explorer and information about the



Lynn Cominsky, Ph.D.

Gamma-ray Large Area Space Telescope (GLAST) project will also be presented. The Academy has partnered with Sonoma State University to build a new NASA-funded robotic telescope system at the Hume Observatory. Visible-light observations to accompany Swift and GLAST will be performed by students and amateur astronomers from this facility.

Monday, January 24, 7:30 pm

i These lectures take place at the Jewish Community Center of San Francisco at 3200 California Street. Price is \$4 for each lecture. Tickets can be purchased by calling (415) 321-8000 or at the door, if available. For more information or to request a brochure, call (415) 321-8000.

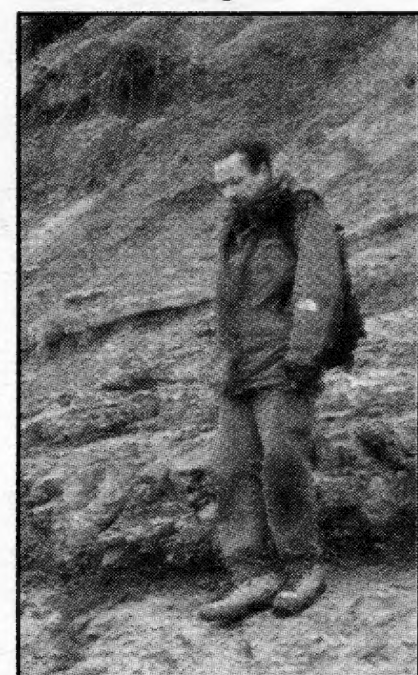
December Members' Lecture

Communities Fall Apart: Life in Times of Extinction

The fossil record is punctuated by at least five biodiversity catastrophes referred to as mass extinctions, the end of the age of dinosaurs being the most recognizable.

However, not many people realize that we are on the verge of a sixth mass extinction – by the year 2032, the United Nations has estimated that if current trends continue, over fifty percent of all species currently alive will have gone extinct. Rather than resulting from causes beyond our control such as an asteroid, this mass extinction is being precipitated by a myriad of human activities.

Join **Peter Roopnarine, Ph.D.**, Curator of Paleontology and Geology at the Academy, as he ponders the sixth mass extinction, considers the lessons learned from the past, and discusses how these lessons might lead to wisdom for our future.



Peter Roopnarine, Ph.D.

Monday, December 13, 2 & 7:30 pm
Zeum Theater, 221 Fourth Street at Howard
Free to members, \$4 Zeum members, \$8 non-members
To order tickets, call (415) 321-8000.
Tickets also sold at the door, if available.

January Members' Lecture

Minerals as Medicine

People have used minerals for thousands of years for a wide variety of purposes. Stones with medicinal or talismanic "properties" were chosen by their appearance or physical properties. Most often, the color and shape of a particular specimen would suggest its possible medicinal use. For instance, red stones like ruby and garnet were used for diseases or wounds that involved blood; green and blue stones were used to calm the nerves and soothe the eyes; while yellow stones could supposedly cure diseases of the liver and intestines. Medicinal minerals were powdered and taken internally, applied to the outside of the body, used as objects of meditation, and in some cases, inserted into the body by surgery. Join **Jean Demouthe, Ph.D.**, senior collections manager in the Department of Invertebrate Zoology and Geology at the Academy, as she weaves the history of minerals as medicine, culminating in the modern uses of these fabled natural inorganic compounds.

Monday, January 10, 2 & 7:30 pm
Zeum Theater, 221 4th Street at Howard
Free to members, \$4 Zeum members, \$8 non-members
To order tickets, call (415) 321-8000.
Tickets also sold at the door, if available.

Special Lecture

Co-sponsored by the World Affairs Council

One With Nineveh: Politics, Consumption, and the Human Future

Paul Ehrlich, Ph.D., Stanford University

Using current research in ecology, demographics, economics, biodiversity, climate, politics and globalization, Paul Ehrlich, Ph.D. examines overpopulation, consumption, and the political and economic inequity that is leading to the degradation of the environment and modern life. **Booksigning to follow the lecture.** **Please note the different time and location.**

Tuesday, January 18, 6 pm
World Affairs Council, 312 Sutter Street, 2nd Floor
\$7 members, \$12 non-members
To order tickets, call (415) 293-4600
or e-mail registration@wacsf.org.

4 DECEMBER

All programs take place at the Academy at 875 Howard Street, unless otherwise noted. Nature Nest, Naturalist Center, and the Academy Classroom are located on the second floor of 875 Howard Street. All programs are free, unless otherwise noted. Non-members must pay museum admission.

1 Wednesday

Lunch Break Series: Great White Sharks of the Farallon Islands

Great white sharks are found hunting for seals every fall around the Farallon Islands. Explore their life history in this area through a slide show, and touch real great white shark teeth. 12:30 & 1:30 pm; Steinhart Aquarium.

2 Thursday

Boiling Point

Special lecture with Ross Gelbspan. See page 3 for more information. 8 pm; \$6 Academy & JCCSF members, \$8 non-members; JCCSF, 3200 California Street, San Francisco.

3 Friday

An Evening of Turkish Culture

Enjoy an evening of Turkish arts, music, and dance. See page 6 for more information. 6:30–9 pm; Free for all visitors; Academy Classroom.

4 Saturday

Turkish Carpet Weaving

Watch as weavers demonstrate weaving techniques for Turkish rugs. See page 6 for more information. 10 am–4:30 pm.

Children's Story Time

Children ages three to seven are invited for story time. This month's stories will be devoted to the seasons. Meet by the Pond Rug in the Naturalist Center. 10:30 am; Naturalist Center.

Bird Migration

Explore the diversity of migrating birds found in the Bay Area, some of them traveling as far south as Tierra del Fuego in Argentina. 12:30 & 1:30 pm; Naturalist Center.

5 Sunday

Turkish Carpet Weaving

See December 4 for details. 10 am–4:30 pm; Academy Classroom.

6 Monday

The Chandra X-ray Observatory

Benjamin Dean lecture with Harvey Tananbaum, Ph.D. See page 3 for more information. 7:30 pm; \$4; JCCSF, 3200 California Street, San Francisco.

8 Wednesday

Members' Holiday Evening

The Academy presents a special members' night to celebrate the holidays. Enjoy live entertainment, holiday treats, and additional discounts on book and gift purchases at the Academy Store. See page 7 for more information. 6–8:30 pm; Free to members; Members only please.

Oil on Ice

Film screening and audience question and answer period with Dale Djerassi, director of *Oil on Ice*. See page 3 for more information. 8 pm; \$6 Academy & JCCSF members, \$8 non-members; JCCSF, 3200 California Street, San Francisco.

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December 2004 & January 2005

9 Thursday

Wild Mushrooms of the Bay Area

Seminar for field trip with Debbie Viess. Continues on Sunday, December 12. See page 2 for more information. Pre-registration required. 7:30–9 pm; \$35 members, \$45 non-members; Academy Classroom.

10 Friday

Scientific Illustration Demonstration

Meet a scientific illustrator and experience a live demonstration of drawings used for scientific publications and research. 3 pm; Naturalist Center.

11 Saturday

Winter Birds of Bodega Bay

Field trip with David Wimpfheimer. See page 2 for more information. Pre-registration required. 9 am–3:30 pm; \$30 members, \$40 non-members; Doran Regional Park, Bodega Bay.

Children's Story Time

See December 4 for details. 10:30 am; Naturalist Center.

Vanishing Vernal Pools

Meet a tiger salamander, and discover the extraordinary story of survival of this species in California's vernal pool habitat. Handle live earthworms, learn to read the secret code of "wildflower rings," and find out why your help is needed to keep California's vernal pools from vanishing forever. 12:30 & 1:30 pm; Steinhart Aquarium.

Songs from the Hebrew Tradition

In celebration of Chanukah, listen to songs within the Hebrew tradition. See page 6 for more information. 1 pm; Academy Classroom.

12 Sunday

Wild Mushrooms of the Bay Area

Field trip with Debbie Viess. See page 2 for more information. Seminar on Thursday, December 9. Pre-registration required. 10 am–1 pm; \$35 members, \$45 non-members; Memorial Park, Loma Mar.

13 Monday

Communities Fall Apart: Life in Times of Extinction

Members' lecture with Peter Roopnarine, Ph.D. See page 3 for more information. 2 & 7:30 pm; Free to members, \$4 Zeum members, \$8 non-members; Zeum Theater, 221 4th Street, San Francisco.

15 Wednesday

What's That Ant In My Kitchen?

Researchers working on the Bay Area Ant Survey will be available to answer questions and provide information on how you can participate in collecting and identifying local ant species. Data sheets and ant collecting kits will be provided for all participating families. 1–3 pm; Naturalist Center.

Out of the Lab

Get a glimpse into the science behind-the-scenes at the Academy. Curators and scientists will show their latest acquisitions and talk about their research in places near and far. 12–1:30 pm; Naturalist Center.

18 Saturday

Children's Story Time

See December 4 for details. 10:30 am; Naturalist Center.

ONGOING EVENTS

African Penguin Feedings

Watch an Academy biologist enter the penguin tank to toss vitamin-stuffed fish to the African penguins. Visitors can ask questions and talk to the birds' caretakers during the feedings. Every day; 11 am & 3:30 pm.

Army Ant Feedings

Watch these fascinating ants eat during scheduled feedings every day. More information on page 6. Every day; 2:15 pm.

Hands-on Science

Visitors of all ages can examine microscopic aquatic life or study adaptations of marine animals with Academy docents and interns.

Wednesdays through Fridays, 4 pm.

Saturdays & Sundays, 10 am–4 pm.

continued from Saturday, December 18

What's That Ant In My Kitchen?

See December 15 for details. 1–3 pm; Naturalist Center.

22 Wednesday

Lunch Break Series: Newts and Salamanders

Meet a Japanese fire-bellied newt, see research specimens, and explore the world of newts and salamanders. 12:30 pm; Naturalist Center.

25 Saturday

The Academy is open
10 am to 5 pm on Christmas Day.

28 Tuesday

California Mammals

Explore the diversity of California mammals. Touch pelts, examine skulls, and discover more about wild animals and their adaptations to life in diverse habitats. 1–3 pm; Naturalist Center.

30 Thursday

What's That Ant In My Kitchen?

See December 15 for details. 11:30 am–1:30 pm; Naturalist Center.

MEMBER INFORMATION

The Academy is open at 875 Howard Street between 4th and 5th Streets in downtown San Francisco. For directions and transit information, please call (415) 321-8000 or visit www.calacademy.org.

Open 365 days a year. Hours every day: 10 am–5 pm

Information Hotline: (415) 321-8000

Web site: www.calacademy.org E-mail: info@calacademy.org

Academy

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JANUARY

All programs take place at the Academy at 875 Howard Street, unless otherwise noted. Nature Nest, Naturalist Center, and the Academy Classroom are located on the second floor of 875 Howard Street. All programs are free, unless otherwise noted. Non-members must pay museum admission.

5

1 Saturday

**The Academy is open
10 am to 5 pm on New Year's Day.**

8 Saturday

Whales and Coastal Wildlife Cruise

Field trip with Ronn Patterson. See page 2 for more information. Pre-registration required. 7 am–5 pm; \$75 members, \$85 non-members; *Berkeley Marina, Berkeley.*

Children's Story Time

Children ages three to seven are invited for story time. This month's selection will feature California birds and mammals. Meet by the Pond Rug in the Naturalist Center. 10:30 am; *Naturalist Center.*

California Seabirds

Explore the amazing diversity of bird life in the offshore waters of California, including migrants from the southern Pacific Ocean. 12:30 & 1:30 pm; *Steinhart Aquarium.*

Music from the American South

Performers of regional music will play classic country blues, Louisiana Cajun, and other types of Southern music. See page 6 for more information. 1 pm, *Academy Classroom.*

The SSsssnakes of California

Examine herpetology specimens, and learn more about the endangered San Francisco garter snake and other serpent species living throughout California. 2 pm; *Naturalist Center.*

10 Monday

Minerals as Medicine

Members' lecture with Jean Demouthe, Ph.D. See page 3 for more information. 2 & 7:30 pm; Free to members, \$4 Zeum members, \$8 non-members; *Zeum Theater, 221 4th Street, San Francisco.*

11 Tuesday

California Mammals

Explore the diversity of California mammals. Touch pelts, examine skulls, and discover more about wild animals and their adaptations to life in diverse habitats. 1–3 pm; *Naturalist Center.*

14 Friday

Scientific Illustration Demonstration

Meet a scientific illustrator and experience a live demonstration of drawings used for scientific publications and research. 3 pm; *Naturalist Center.*

15 Saturday

Birding at Palo Alto Baylands and Mountain View Shoreline

Field trip with Dan Murphy. See page 2 for more information. Pre-registration required. 8 am–3 pm; \$30 members, \$40 non-members; *Palo Alto Baylands, Palo Alto.*

Children's Story Time

See January 8 for details. 10:30 am; *Naturalist Center.*

Afro-Cuban Dance

The Olorun Ensemble pays homage to the African roots of Cuban folkloric dance. See page 6 for more information. 1 pm, *Academy Classroom.*

continued from Saturday, January 15

What's That Ant In My Kitchen?

Researchers working on the Bay Area Ant Survey will be available to answer questions and provide information on how you can participate in collecting and identifying local ant species. Data sheets and ant collecting kits will be provided for all participating families. 1–3 pm; *Naturalist Center.*

18 Tuesday

One With Nineveh: Politics, Consumption ...

Special lecture with Paul Ehrlich, Ph.D. See page 3 for more information. 6 pm; \$7 members, \$12 non-members; *World Affairs Council, 312 Sutter Street, San Francisco.*

19 Wednesday

Lunch Break Series: Gray Whales are Here!

One of the longest mammal migrations can be observed as gray whales move between their feeding grounds in Arctic waters and their breeding grounds in Mexico. Enjoy a slide show to explore their natural history, and learn how you can witness this event yourself. 12:30 pm; *Steinhart Aquarium.*

Out of the Lab

Get a glimpse into the science behind-the-scenes at the Academy. Curators and scientists will show their latest acquisitions and talk about their research in places near and far. 12–1:30 pm; *Naturalist Center.*

20 Thursday

Third Thursday

Filled with clownfish, cocktails, conversation, and corals the Academy after-hours is the place to be on the third Thursday of every month. Explore exhibits and aquarium displays while listening to live music and enjoying a no-host bar. Free for members, \$5 reduced admission for non-members; 5–9 pm.

21 Friday

What's That Ant In My Kitchen?

See January 15 for details. 11:30 am–1:30 pm; *Naturalist Center.*

22 Saturday

Children's Story Time

See January 8 for details. 10:30 am; *Naturalist Center.*

24 Monday

Exploding Stars, Blazing Galaxies and Monstrous Black Holes: The Extreme Universe of Gamma-ray Astronomy

Benjamin Dean lecture with Lynn Cominsky, Ph.D. See page 3 for more information. 7:30 pm; \$4; *JCCSF, 3200 California Street, San Francisco.*

Craig Venter, Ph.D.

Conversations at the Herbst lecture. See page 2 for more information. 8 pm; \$16.50 members, \$18.50 non-members; *Herbst Theatre, 401 Van Ness Avenue, San Francisco.*

26 Wednesday

Jared Diamond, Ph.D.

Conversations at the Herbst lecture. See page 2 for more information. 8 pm; \$16.50 members, \$18.50 non-members; *Herbst Theatre, 401 Van Ness Avenue, San Francisco.*

28 Friday

Scientific Illustration Demonstration

See January 14 for details. 3 pm; *Naturalist Center.*

29 Saturday

Illustrating Reptiles and Amphibians

First workshop in two-Saturday series with Carolynne Griffin. See page 2 for more information. Pre-registration required. Continues Saturday, February 5. 9:30 am–2 pm; \$65 members, \$75 non-members; *Academy Classroom.*

Children's Story Time

See January 8 for details. 10:30 am; *Naturalist Center.*

What's That Ant In My Kitchen?

See January 15 for details. 1–3 pm; *Naturalist Center.*

A Treasure's Trove

Children's author Michael Stadther will read from his new book *A Treasure's Trove* and create a treasure hunt on **Saturday, January 29 and Sunday, January 30.** Twelve animal-shaped jewels that are in the treasure hunt will be on display for the weekend. Check the Academy's Web site at www.calacademy.org for time and details.

FEBRUARY SAVE THE DATE

... for these February programs. The Academy is transitioning to a quarterly newsletter schedule, so a *Members' Newsletter* will not be sent out for the month of February. Please check the Web site at www.calacademy.org for information about February programs, classes and lectures at the Academy. The next newsletter, the Spring 2005 issue, will cover March, April and May programs.

5 Saturday

Illustrating Reptiles and Amphibians

Second workshop in two-Saturday series with Carolynne Griffin. See page 2 for more information. Pre-registration required. Starts Saturday, January 29. 9:30 am–2 pm; \$65 members, \$75 non-members; *Academy Classroom.*

8 Tuesday

Lester Brown

Conversations at the Herbst lecture. See page 2 for more information. 8 pm; \$16.50 members, \$18.50 non-members; *Herbst Theatre, 401 Van Ness Avenue, San Francisco.*

16 Wednesday

Out of the Lab

Academy herpetologists will be working with amphibian and reptile specimens collected during recent research expeditions to Myanmar. Watch as they demonstrate how these specimens are used for scientific study and new species descriptions. 12–1:30 pm; *Naturalist Center.*

Wendell Berry

Conversations at the Herbst lecture. See page 2 for more information. 8 pm; \$16.50 members, \$18.50 non-members; *Herbst Theatre, 401 Van Ness Avenue, San Francisco.*

17 Thursday

Third Thursday

See January 20 for details. Free for members, \$5 reduced admission for non-members; 5–9 pm.

Andrias davidianus

A Giant Among Amphibians

While perusing the "China Wildlife Company of Hong Kong" catalogue for king cobra food in 1974, Steinhart Aquarium biologists noted two rare Chinese



One of the Chinese giant salamanders at the Steinhart Aquarium.

giant salamanders (*Andrias davidianus*) for sale. They quickly made an important order – thirty Asian rat snakes and three water snakes as food for the cobra, and both of the rare salamanders for a new aquarium display.

Since then, C.I.T.E.S. (Convention on International Trade in Endangered Species) has listed the Chinese giant salamander as an endangered species. Habitat loss and poaching for the purposes of food and traditional medicine ingredients have driven this species to the brink of extinction. Inhabitants of fast flowing, high elevation, cold water tributaries of the Pearl, Yellow, and Yangzi Rivers of China, the remaining "Giants" venture out at night to eat anything smaller than their gigantic mouths, including crabs, fish, snakes, insects, rats, turtles, and frogs.

In 1993, Steinhart Aquarium received a third "Giant" from a hobbyist who turned over the animal to local United States Fish and Wildlife Service agents.

The aquarium's three adult Chinese giant salamanders are now displayed in separate freshwater tanks that are kept at 50° Fahrenheit. These tanks are sized to simulate natural river bed depressions under rocks or trees, where the animals would normally sleep in the wild. Resting during visitor hours, the salamanders come to life when biologists place a fish near their mouth. Never leaving the water, they take in oxygen through capillary-enriched skin folds along the body. Early attempts to place these animals together resulted in "near death experiences." Based on this experience, we suspect the only time "Giants" meet face to face without blood loss is when eggs are laid in a male's stream bed depression to be fertilized and defended until hatching. When the Academy moves back to Golden Gate Park, the necessary components for breeding these rare animals will be at hand, and Steinhart's animals will participate in a Species Survival Plan.

Academy scientists who have been surveying the fauna of mainland China for the past eight years have yet to encounter a Chinese giant salamander in the wild. Visitors can see the Academy's "Giants" at 875 Howard Street and know it to be a most rare encounter.

— Tom Tucker
Aquarium Curator

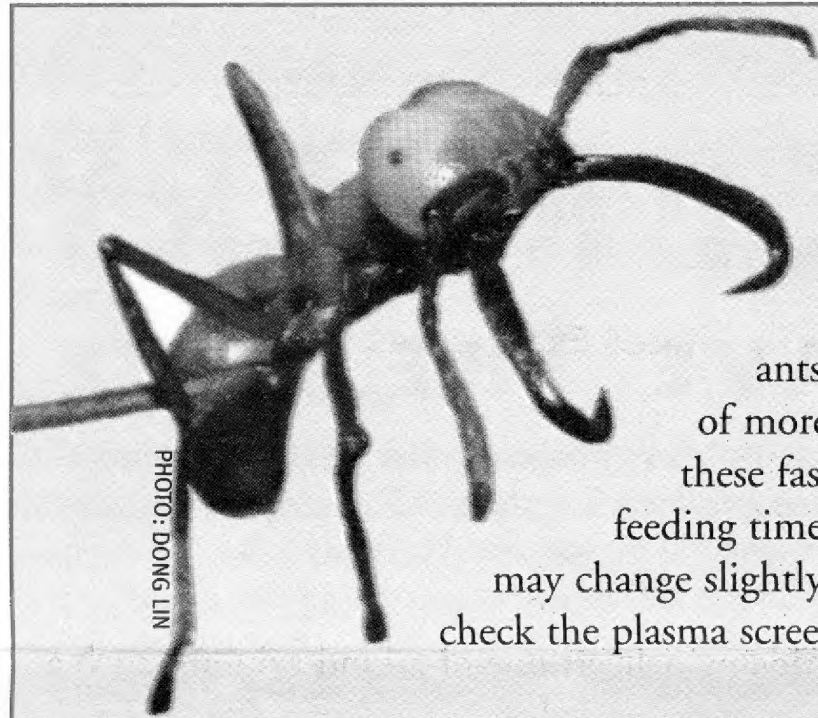
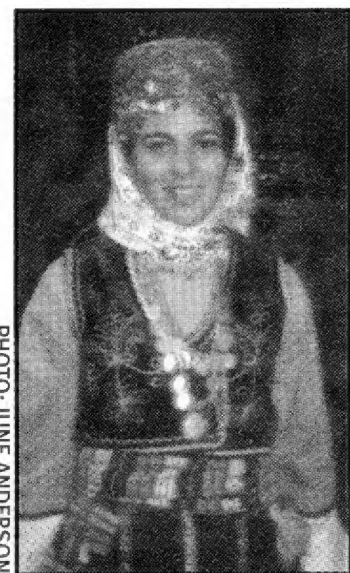


PHOTO: DONG LIN

Army Ant Feedings

Known as the "Huns and Tartars of the insect world," Army ants are such voracious eaters that one colony can decimate an area of more than 1,800 square yards in a single day. Now you can watch these fascinating ants eat during a scheduled feeding every day. A feeding time has been initially set for **2:15 pm every day**, but this time may change slightly as Academy biologists continue to learn about the ants, so check the plasma screen in the Academy lobby for updated daily schedules.

Traditional Arts Programs



Traditional clothing of the Yore Folk Dance Ensemble.

An Evening of Turkish Culture

Enjoy an evening of Turkish arts, including costumes, music by the Kervan Ensemble, dance by the Yore Folk Dance Ensemble, and informal talks on the aesthetics of Turkish rugs.

Friday, December 3
6:30–9 pm; Academy Classroom

Turkish Carpet Weaving

Serife Atlihan and Cennet Deneri will demonstrate the knotting techniques of Turkish rugs made by the DOBAG women's cooperative, a project dedicated to reintroducing natural plant dyes and to conserving ancient village designs. With their bold, geometric motifs and glowing colors, DOBAG carpets are a feast for the eyes.

Saturday & Sunday, December 4 & 5
10 am–4:30 pm; Academy Classroom



Turkish weaver Cennet Deneri at her loom.

Songs from the Hebrew Tradition

In celebration of Chanukah, the choral group Pass It Around! performs a repertoire of canons (vocal harmonies) from Israel, Europe, Russia, and the Sephardic diaspora, highlighting the historical context of songs within the Hebrew tradition. Audience participation is encouraged.

Saturday, December 11, 1 pm
Academy Classroom

Music from the American South

Eric and Suzy Thompson are virtuoso performers of regional music from the American South, including old-time Appalachian ballads and breakdowns, classic country blues, and Louisiana Cajun music. Using fiddles, guitars, a mandolin, and a Cajun accordion, they'll show how European, African, and French traditions have influenced American music.

Saturday, January 8, 1 pm
Academy Classroom



Suzy and Eric Thompson

Afro-Cuban Dance



Susana Arenas, director of the Olorun Dance Ensemble.

The Olorun Ensemble pays homage to the African roots of Cuban folkloric dance. The company's director, Susana Arenas, will explain the origin and cultural significance of each dance, many of which enact stories of the Orishas – deities of the Lukumi tradition from West Africa.

Saturday, January 15, 1 pm
Academy Classroom

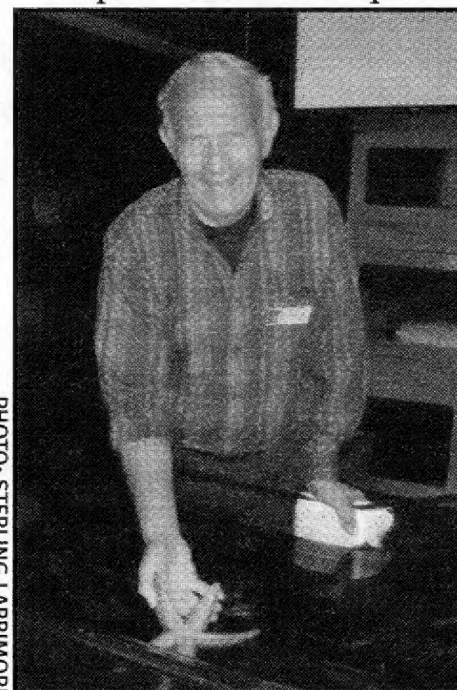
i For more information on Academy Traditional Arts Programs, visit www.calacademy.org/tradarts or call (415) 321-8000.

Volunteer Profile

Touch Tidepool Musings

"Do sea stars have eyes?"

This is the kind of question Burt Norall revels in answering at the Touch Tidepool tank. Staffing a facilitated exhibit like the Touch Tidepool is a challenging assignment, but Norall looks forward to his Monday morning shift with unabashed pleasure. He's been volunteering at the Academy for eight years. Why does he continue? A retired teacher and school administrator, Norall says, "I love teaching and miss contact with children. The tidepool gives me an opportunity to practice my Socratic teaching style in a rich environment. I want the students to think and figure things out for themselves. You never forget something you touch, and the assorted invertebrates in the Touch Tidepool offer a unique sensory experience."



Dedicated volunteer Burt Norall is a fan of the forward-thinking, new tidepool at 875 Howard Street.

Children are very protective of the natural world and often show more respect for it than adults."

Norall's response to the Howard Street tidepool exhibit is decidedly positive with good reason. Before the Academy moved to Howard Street, a committee that included volunteers gave suggestions for constructing a new tidepool. "The designers and engineers actually listened to our suggestions and incorporated our ideas in the Howard Street facility," said Norall. Many of the successful components at the Howard Street facility will be incorporated into the design of the new Academy tidepool back in Golden Gate Park.

Norall's praise is not limited to the tidepool. He's a fan of the downtown Academy, noting the ease of transportation, the ANTS exhibit, the dynamic combination of biological and technological elements, and the infinite opportunities to "challenge old thinking." Progressive and forward-thinking, Norall is hopeful for the future as he meets children on the Academy floor. "When I see this kind of interest, I think to myself, this world is going to be okay."

— Rosalind Henning
Manager of Volunteer Services

i Touch Tidepool volunteers are always welcome. If interested, call (415) 321-8111.

Corporate and Foundation Support

The Academy thanks the following corporations and foundations for their recent generous contributions: In support of the Run To The Far Side® XX, **Blue Cross of California** for \$25,000 and **Nestle USA Inc.** for \$7,500. In support of the 19th Annual Academy Ball, **Burrill & Company** for \$5,000. In support of Academy general operation, **B.T. Rocca, Jr. Foundation** for \$1,000; **Wallis Foundation** for \$25,000; and **Sidney Stern Memorial Trust** for \$5,000.

In support of Subhankar Banerjee's *Seasons of Life and Land* traveling exhibit, **The Lannan Foundation** for \$10,000. In support of Academy research, **Denver Zoological Foundation, Inc.** for \$4,000. In support of the Careers in Science program, **S.D. Bechtel, Jr. Foundation** for \$20,000. In support of Academy Field Studies Education, **Laurel Foundation** for \$7,500.

Thank you to all of these donors. This support allows the Academy to fulfill its 150-year-old mission to explore and explain the natural world.

Members' Holiday Evening

In appreciation of its members' support, the Academy presents a special members' event to celebrate the holidays. On Wednesday, December 8, from 6 pm to 8:30 pm, the Academy will hold its annual shopping evening, featuring live holiday entertainment and a delicious assortment of cookies. Members will get

25% off on all book purchases and 15% off on all other purchases this evening at the Academy Store (instead of the usual 10% members' discount.)

An Academy Membership is a unique gift for family and friends. Why not surprise them this holiday season by giving a gift that can last all year long? (See bottom of page for coupon.) Purchase a gift membership on our secure Web site at www.calacademy.org/store, buy it in person from 10 am to 4:30 pm every day at 875 Howard Street, or call (800) 794-7576 to order over the phone.

In this time of hope and renewal, the Academy wishes you and yours a happy and healthy holiday season.

Wednesday, December 8, 6-8:30 pm
Free to members. Members only please.
For more information, call (800) 794-7576.

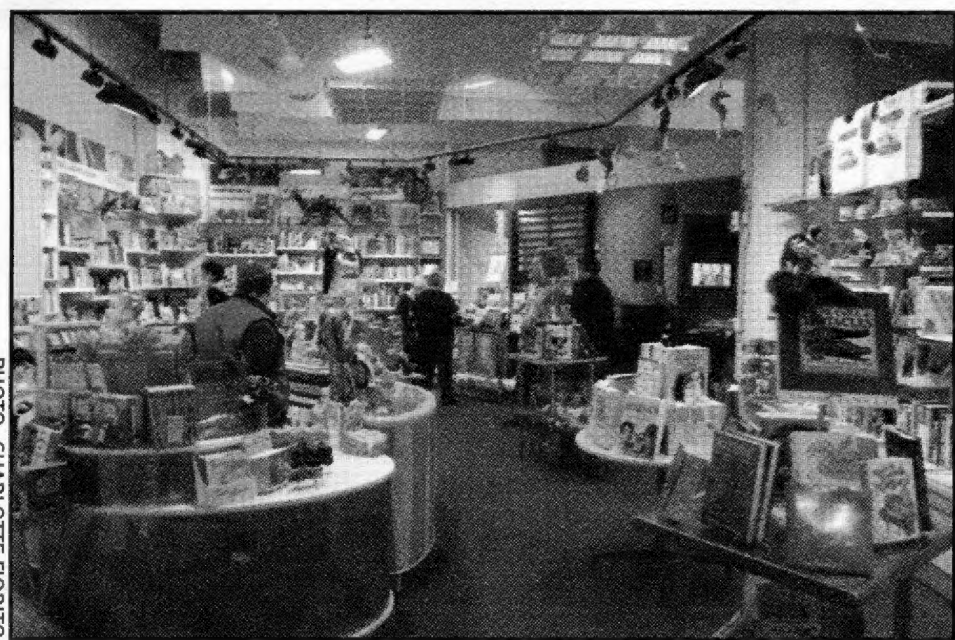


PHOTO: CHARLOTTE FIORITO

Friends of the Academy

July and August 2004

Thank you for your gift of \$1,000 and above to the Academy's Annual Fund.

Mr. and Mrs. Brook H. Byers, Mr. and Mrs. John J. Fisher,
 Mr. and Mrs. James H. Greene, Jr.,
 Mr. Donald M. Gregory, Jr., Mr. George G. Hawxhurst,
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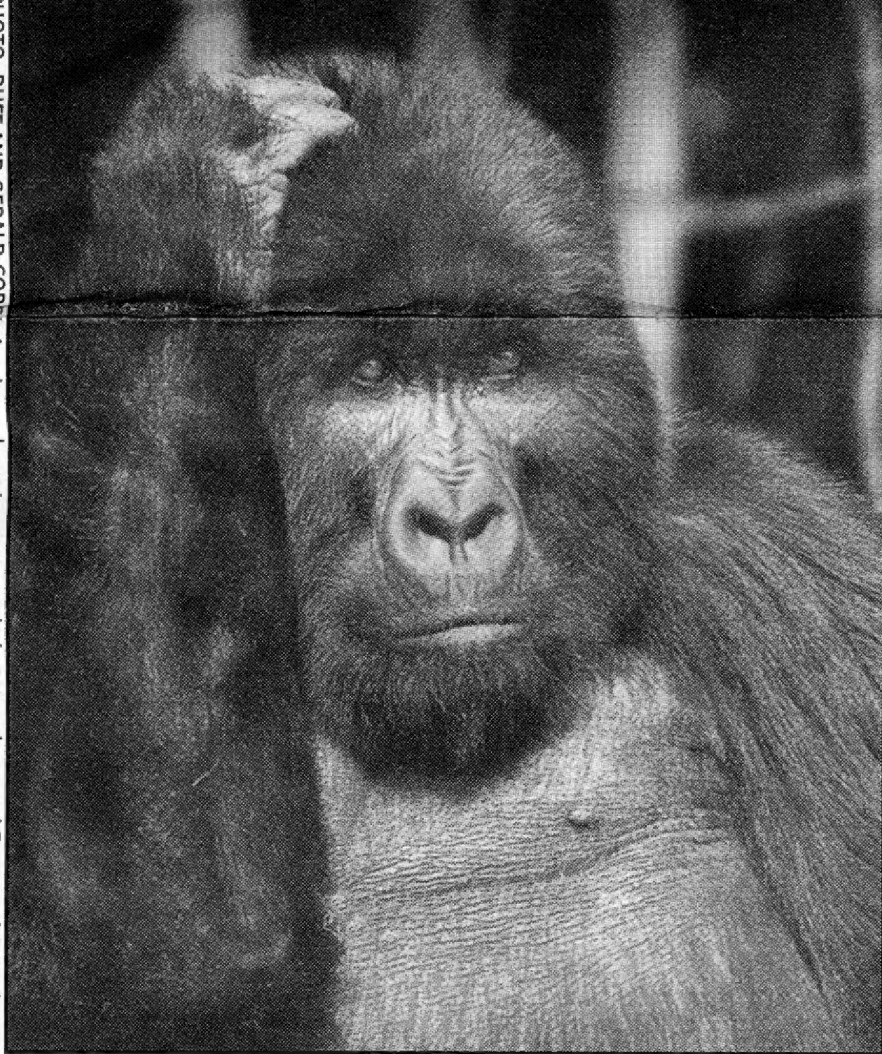
New Donor Circle Members

July and August 2004: \$125 to \$999

Many thanks to the following new donors and those who have increased their support of the Academy recently.

Mr. and Mrs. Royal Brown, Mr. and Mrs. Robert J. DeFea,
 Ms. Carol J. Donohoe, Mr. and Mrs. Frank J. Ehret,
 Mr. and Mrs. Richard Goss, II, Mr. Richard E. Hake and
 Ms. Christine C. Colladay, Dr. William Y. Hoffman and
 Ms. Teresa Holt, Ms. Alice S. Hunter, Mr. Leslie Lamport,
 Mr. and Mrs. Fred Levinson, Ms. Ruth M. Ocheltree,
 Mr. and Mrs. Ron Slayen, Mr. and Mrs. Charles Urbonas

Are You Puzzled?



Mountain Gorilla in Rwanda, Africa, 2004.

...by the best way to make a tax-wise gift?

Use Your Heart... This is the time of year when we think about giving extra help to organizations that we cherish such as the Academy. If you start today, you can make a gift that makes good sense for you and the Academy – don't wait until late December!

...And Your Head Tax-smart gifts let you give more. Instead of selling appreciated securities, use them to make a gift. You may be able to give more because of the charitable deduction and capital gains tax relief. A life income gift could give you those tax benefits and income, too. Subscribe to *Discovery*, our newsletter of science and philanthropy for more financial, charitable, and estate-planning ideas.

Plan Ahead Year-end gifts are very important, but how about getting started on that New Year's resolution list? Many of us need to write or review our will or living trust. If this is on your list for 2005, think about including the Academy while taking care of family, friends, and other charities.

Learn More Information about what, how, and when to give is yours for the asking. Contact Louise Gregory at lgregory@calacademy.org or (415) 321-8407 to subscribe to *Discovery* or request "Top Ten Year-End Tax Planning Questions and Answers."

Special Holiday Membership Offer

\$10 OFF

Buy a unique gift for your friends and family this holiday season – a California Academy of Sciences Family Membership! Get \$10 off of a NEW Family Membership purchase (\$50 instead of \$60). Simply mention this ad when purchasing the gift membership one of four ways:

On-Site

Buy your gift membership seven days a week from 10 am to 4:30 pm at the Academy's Admission Desk.

Web

Buy your gift membership on our Academy Store secure Web site at www.calacademy.org/store.

Phone

Buy your gift membership over the phone by calling (800) 794-7576.

Mail

Write us with the name and address of your gift recipient plus payment by check or credit card to:
 Membership Office
 California Academy of Sciences
 875 Howard Street
 San Francisco, CA 94103-3009

No renewals with this offer. This offer expires January 31, 2005.
 May not be combined with other offers.

Your Annual Fund Support Makes a Real Difference

Here are 10 reasons why:

Vital Scientific Research Around The World

Academy scientists conduct field research around the Bay Area, throughout California, across the United States, and in nineteen foreign countries.

Steinhart Aquarium

From clownfish to snapping turtles, Steinhart Aquarium has long been home to diverse aquatic life. Steinhart is also active in animal conservation through breeding programs like Species Survival Plans which help ensure the survival of threatened species.

Early Childhood Education

The Academy's Early Childhood Education Program helps children kindergarten-age and younger prepare to learn about the natural world.



PHOTO: DONG LIN

Community Outreach Through Education

Outreach programs like *Earth, Ocean, and Space* deliver science education experiences directly to those that need them most, throughout the Bay Area and beyond.

Empowering Teachers Across California

The Academy provides science educators with resources, training, and materials that greatly enhance their classroom programming.

People Facilitated Experiences

Academy docents are dedicated volunteers who add a personal touch to the Academy's museum floor learning experiences.

Bringing The World To San Francisco

The Academy delivers one-of-a-kind exhibits, such as the Academy-produced *ANTS: Hidden Worlds Revealed*, and draws the finest in exhibit programming to San Francisco, like the upcoming *Chocolate* exhibit.

Making Critical Biodiversity Information Accessible

Through our Web site and interactive stations like *Science Now*, cutting-edge information and news related to Academy research efforts is made available from around the world.

World-Class Specimen Collections

Ranked among the world's largest, the Academy's scientific collections are a valuable research tool, and are considered international treasures.

Training and Inspiring the Next Generation of Scientists

The *Careers in Science* Program provides students from groups traditionally underrepresented in the sciences with opportunities to learn about basic science concepts and explore potential science and education careers in an authentic, paid work environment.

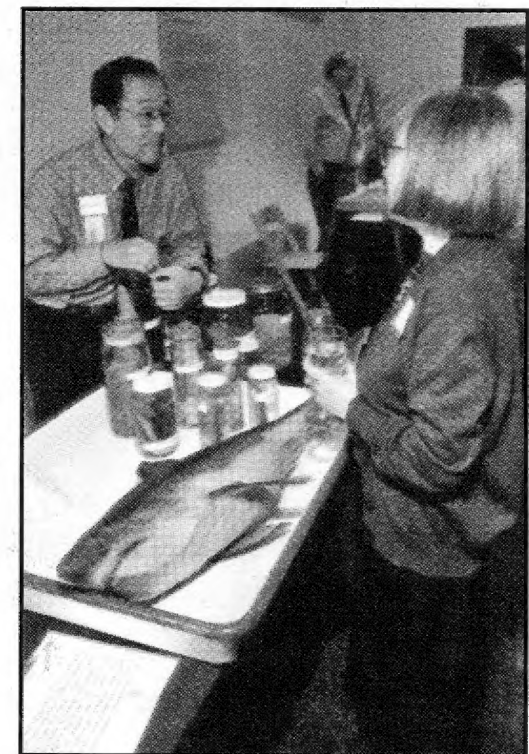


PHOTO: CHARLOTTE FIORITO

This year, annual fund support has enabled the Academy to deliver critical experiences of the natural world to the public. As the year draws to a close, we hope you'll express your commitment to science education and biodiversity research through a year-end gift. This support will help create inspiring exhibits, student internships, teacher training, and a variety of other programs that focus on the natural world. With your continued support, we will ensure that the Academy at 875 Howard Street continues to be a dynamic learning environment.

i For more information about giving to the Annual Fund, call Marlene Dabis at (415) 321-8405 or e-mail mdabis@calacademy.org.

Grow Cafe Holiday Gift to Members

**BUY A SANDWICH OR SALAD =
GET A FREE ICE CREAM CONE**

Grow Cafe is offering all Academy members a gift this Holiday season! Come to Grow Cafe and get a free ice cream cone with any salad or sandwich of \$5 or more. Offer good the entire month of December.

Grow Cafe at the California Academy of Sciences offers delicious, healthy food for adults and children, with an emphasis on organic and locally harvested products.



In Retrospect... Looking Back at Academy History

150 YEARS AGO - September 11, 1854 - "Mr. Sloat exhibited a proof-sheet of the proceedings of the previous meeting, taken from the columns of *The Pacific*, a weekly newspaper devoted more particularly to religious subjects, as a specimen of the manner in which the transactions of the Academy might be published in permanent form and at trifling expense. On motion of Dr. William P. Gibbons, the publication committee was instructed to have published 250 copies of the *Proceedings* of the Academy in the form exhibited by Mr. Sloat, and that the subscription price of the same should be fixed at \$3 a year; and, on motion of Dr. Ayres, the recording secretary was directed to publish the proceedings in *The Pacific* as soon after meetings as practicable. Dr. Henry Gibbons then exhibited a head of bearded wheat, said to grow wild in the mountains. It 'measured about seven inches in length, the seeds quite large and nearly half an inch long.' Some doubt was expressed whether it belonged to the genus *Triticum* or to a new genus. Dr. William O. Ayres presented a communication about the inappropriate naming of fishes found in the fish markets in San Francisco." From: Leviton and Aldrich's *California Academy of Sciences 1853-1906*.

50 YEARS AGO - "A Little Lemon Juice, Please - There aren't very many fish-eating bats in this part of the world, but Dr. Robert T. Orr, curator of birds and mammals, is stuck with four of them. Brought here from Isla Blanca, near Guaymas, Mexico, they have been taking their ease at the Academy for a month, steadfastly eating nothing but fish, preferably white-bait, and sliced, please. Steinhart Aquarium has been temporarily declared off limits to Dr. Orr. The bats, *Pisonyx vivesi*, were collected by Prentice Bloedel, graduate student, Department of Zoology, University of California. ... According to Bloedel and Dr. Orr there isn't anyone on Isla Blanca to cut up whitebait for the bats. Having to rough it, they skim the water until they impale a small fish or shrimp on their claws." From: *Academy Newsletter*, June 1954.

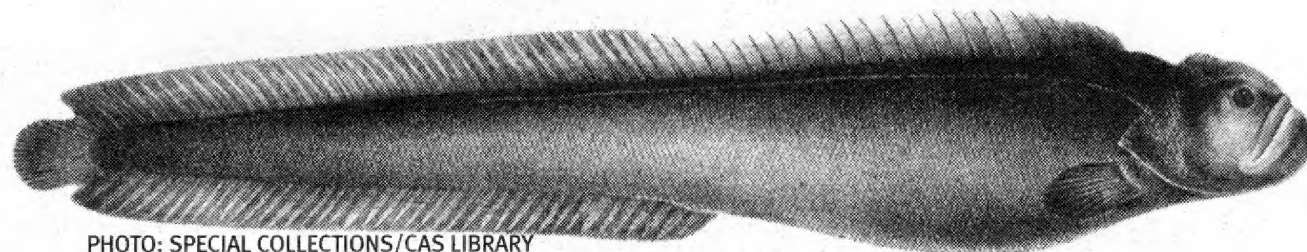


PHOTO: SPECIAL COLLECTIONS/CAS LIBRARY

150 Years of Academy *Proceedings*. This illustration of a new "singular and grotesque-looking" fish, *Cebidichthys crista-galli*, was the first plate published by the Academy, and accompanied the scientific description of the species by William O. Ayres.

Reciprocal Membership Program Updates

Academy members now receive 10% off all books purchased at the Friends of the Library Book Bay at the Main Library or Fort Mason Center.

As of November 1, 2004, these five science centers and museums have been added to the list of free reciprocal memberships:

- Discovery Museum (Bridgeport, Connecticut)
- Haffenreffer Museum of Anthropology, Brown University (Bristol, Rhode Island)
- Lexington Children's Museum (Lexington, Kentucky)
- Markham Museum (Markham, Ontario, Canada)
- ScienceWorks Hands-On Museum (Ashland, Oregon)

These nine sites are no longer participating in the program, effective November 1, 2004:

- Capital Children's Museum (Washington, D.C.)
- Children's Science Center at SD School of Mines & Technology (Rapid City, South Dakota)
- The Delaware Agricultural Museum & Village (Dover, DE)
- Excel Interactive Science Museum (Salisbury, Maryland)
- Musée J. Armand Bombardier (Valcourt, Quebec, Canada)
- New Jersey State Aquarium (Camden, New Jersey)
- North Bay Area Museum (North Bay, Ontario, Canada)
- Science Center of West Virginia (Bluefield, West Virginia)
- SciTrek, The Science and Technology Museum of Georgia (Atlanta, Georgia)

i You may obtain a current copy of the reciprocal list onsite or at www.calacademy.org/membership.

Statement of Ownership Information: Academy

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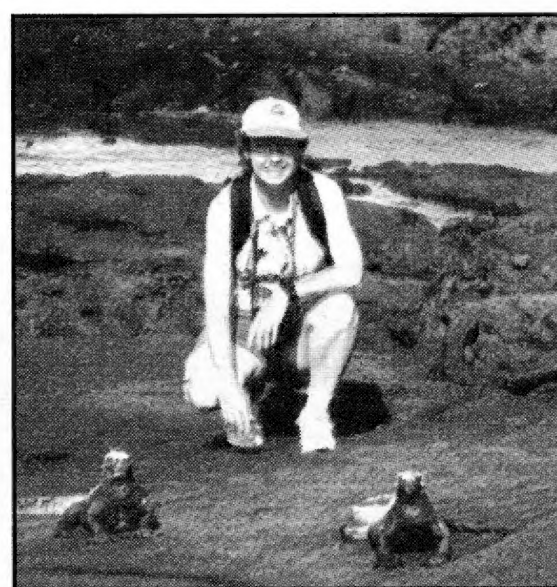
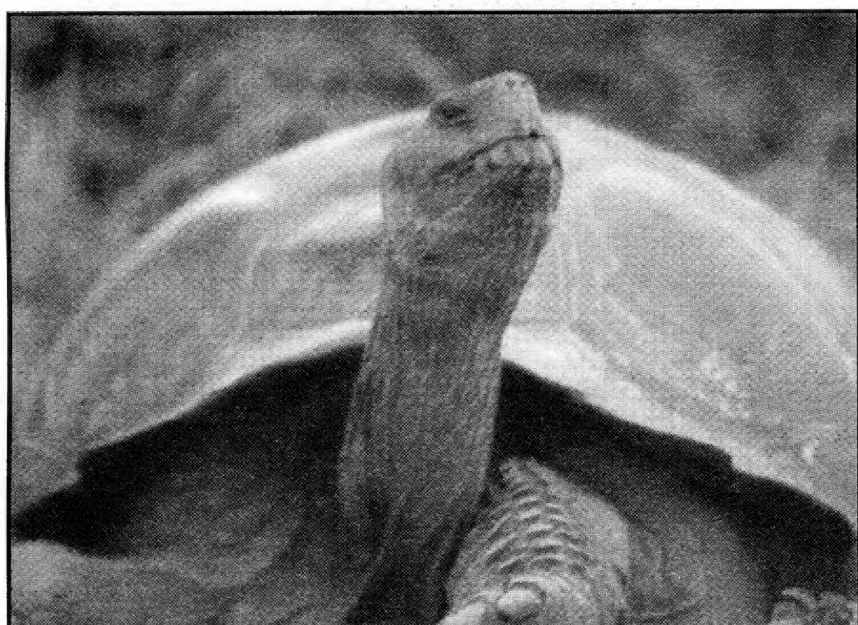
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B. Pd &/or requested circulation		
1. Outside county mail subs (paid &/or requested)	17,629	16,908
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3. Sales through dealers & carriers, street vendors & counter sales	484	365
4. Other classes mailed	343	207
C. Total Pd &/or Requested circulation	18,456	17,480
D. Free Distribution by mail		
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3. Other classes	85	71
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H. Copies not distributed	245	615
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J. Percent paid/requested circulation	97.0%	97.7%

Academy Travel Program A Once in a Lifetime Trip

Two Weeks in the Galapagos Islands
with Meg Burke, Ph.D., Tom Daniel, Ph.D., Terry Gosliner, Ph.D., and John McCosker, Ph.D.
Aboard the *Isabella II*
May 22-June 8, 2005

To celebrate the 100th anniversary of the Academy's historic first research expedition to the Galapagos Islands aboard the schooner *Academy*, a two-week itinerary has been planned exclusively for Academy members. The Galapagos Islands are not only renowned for their importance to the scientific community, but are also particularly meaningful to the Academy.

Nearly 100 years ago in 1905, the Academy undertook its first scientific expedition to the Galapagos aboard the schooner *Academy*. This eight-man scientific mission, led by Rollo Beck, a veteran of four previous voyages to the Galapagos, spent more than 500 days collecting specimens, both live and dead, of



Meg Burke, Ph.D., Academy Education Director

birds, reptiles, insects and plants, as well as fossils and eggs. During the *Academy's* absence from its home port of San Francisco, the devastating earthquake and fires of 1906 struck, destroying the Academy and almost the entirety of its collections. Undeterred by this painful loss, the Academy's trustees vowed to rebuild, using the specimens collected during the Galapagos expedition as the foundation of the Academy's rebirth.

The *Isabella II*, a first-class yacht with spacious cabins, state-of-the-art technology, and a full complement of amenities, provides the perfect base for this adventure. During the two-week itinerary - designed to entice both first-time and repeat visitors - participants will explore many more islands that can be included in the usual week-long itinerary, and experience firsthand the diversity of plant and animal life

resident in this unique part of the world.

Of particular interest is the scheduled landing at Academy Bay (named after the schooner *Academy*) on Santa Cruz Island, with a full day at the Charles Darwin Research Center. Besides landings, snorkeling, hiking, and Zodiac cruises along the islands' coastlines, this trip features uniquely-designed visits to the northern islands of Pinta and Marchena, which are not open to tourism, and can only be visited via special permit.

Along with four Academy scientists, who will all present lectures in their fields, there will also be a team of Galapagos naturalists aboard.

Cost: \$9,790 per person (based on double occupancy) plus airfare (currently \$850 round-trip San Francisco-Quito-Guayaquil-San Francisco).

i To take advantage of this truly extraordinary trip - most likely not to be repeated for years - please e-mail the Academy Travel Office at calacademy@hcaptravel.com or call (800) 853-9372.

